

AMENDMENT

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a vector comprising an isolated polynucleotide molecule that hybridizes with a nucleotide sequence of SEQ ID No:1 or SEQ ID No:5 under stringent conditions, and which has an index of modification of said potassium channel protein in response to a physiological characteristic of the potassium channel protein; and

b) measuring said index.

¹¹
~~11~~. (New) A pharmaceutical composition which comprises as an active ingredient a compound or a peptide which is capable of significantly modifying the activity of potassium channel protein exclusively expressed in the brain and which is selected by the screening method of claim ¹⁰~~12~~.

¹²
~~12~~. (New) The pharmaceutical composition according to claim ¹¹~~13~~, which is an agent for treating a central nervous system disorder.

¹³
~~13~~. (New) The pharmaceutical composition of claim ¹²~~14~~, which is an agent for treating dementia, cerebral ischemic disorders, or epilepsy.

¹⁴
~~14~~. (New) The pharmaceutical composition according to claim ¹³~~15~~, which is an agent for treating dementia.

¹⁵
~~15~~. (New) A method of screening for compounds and peptides capable of modifying the activity of a potassium channel protein comprising:

a) adding an agent to be tested to a system which comprises a potassium channel protein produced by expressing the protein in a host cell or on a surface of a host cell containing a vector comprising an isolated polynucleotide molecule which comprises a nucleotide sequence encoding an amino acid sequence selected from the group consisting of SEQ ID NO: 2 and

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SEQ ID NO: 6 which has an index of modification of said potassium channel protein in response to a physiological characteristic of the potassium channel protein; and

b) measuring said index.

¹⁶
~~18.~~ (New) A pharmaceutical composition which comprises as an active ingredient a compound or a peptide which is capable of significantly modifying the activity of potassium channel protein exclusively expressed in the brain and which is selected by the screening method of claim ¹⁵~~17~~.

¹⁷
~~19.~~ (New) The pharmaceutical composition according to claim ¹⁶~~18~~, which is an agent for treating a central nervous system disorder.

¹⁸
~~20.~~ (New) The pharmaceutical composition of claim ¹⁷~~19~~, which is an agent for treating dementia, cerebral ischemic disorders, or epilepsy.

¹⁹
~~21.~~ (New) The pharmaceutical composition according to claim ¹⁸~~20~~, which is an agent for treating dementia.

²⁰
~~22.~~ (New) A method of screening for compounds and peptides capable of modifying the activity of a potassium channel protein comprising:

a) adding an agent to be tested to a system which comprises a potassium channel protein produced by expressing the protein in a host cell or on a surface of a host cell containing a vector comprising an isolated polynucleotide molecule which comprises a nucleotide sequence selected from the group consisting of the 6th to 3257th nucleotide sequence of SEQ ID NO: 1 and the 4th to 3057th nucleotide sequence of SEQ ID NO: 5, and a nucleotide sequence which is degenerate with respect to said nucleotide molecule, which has an index of modification of said

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potassium channel protein in response to a physiological characteristic of the potassium channel protein; and

b) measuring said index.

21
23.

(New) A pharmaceutical composition which comprises as an active ingredient a compound or a peptide which is capable of significantly modifying the activity of potassium channel protein exclusively expressed in the brain and which is selected by the screening method of claim 22.

22
24.

(New) The pharmaceutical composition according to claim 23, which is an agent for treating a central nervous system disorder.

23
25.

(New) The pharmaceutical composition of claim 24, which is an agent for treating dementia, cerebral ischemic disorders, or epilepsy.

24
26.

(New) The pharmaceutical composition according to claim 25, which is an agent for treating dementia.